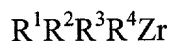


WHAT IS CLAIMED:

1 Claim 1. A propylene polymer composition which is the product obtained by the  
2 steps comprising:

3 polymerizing propylene in the presence of an olefin polymerization catalyst  
4 comprising

5 (i) (a) a zirconocene compound represented by the following formula



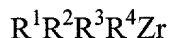
7 wherein two of  $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$  are each a substituted indenyl group substituted with  
8 aryl group, and linked together through a dimethylsilylene; and remaining two of  $R^1$ ,  $R^2$ ,  
9  $R^3$  and  $R^4$  are each a halogen atom, and

10 (ii) at least one organoaluminum oxy-compound,

11 to prepare a propylene polymer (A1) having a melt flow rate (MFR), as measured  
12 according to ASTM D-1238, at 230°C under a load of 2.16 kg, of 0.01 to 30 g/10 min.;  
13 and a molecular weight distribution (Mw/Mn), as measured by gel permeation  
14 chromatography (GPC), of 2 to 3;

15 polymerizing propylene in the presence of an olefin polymerization catalyst  
16 comprising

17 (i) (a) a zirconocene compound represented by the following formula



19 wherein two of  $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$  are each a substituted indenyl group substituted with  
20 aryl group, and linked together through a dimethylsilylene; and the remaining two of  $R^1$ ,  
21  $R^2$ ,  $R^3$  and  $R^4$  are each a halogen atom, and

22 (ii) at least one organoaluminum oxy-compound,

23 to prepare a propylene polymer (A2) having a melt flow rate (MFR), as measured  
24 according to ASTM D-1238, at 230°C under a load of 2.16 kg, of 30 to 1000 g/10 min.;  
25 and a molecular weight distribution (Mw/Mn), as measured by gel permeation  
26 chromatography (GPC), of 2 to 4; wherein the ratio ((A2)/(A1)) of the MFR of said

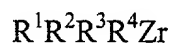
propylene polymer (A2) to the MFR of said propylene polymer (A1) is not less than 30;  
and

mixing 10 to 90% by weight of the propylene polymer (A1) and 10 to 90% by  
weight of the propylene polymer (A2).

Claim 2. A propylene polymer composition which is the product obtained by a  
multi-stage polymerization method comprising the steps of:

polymerizing propylene in the presence of an olefin polymerization catalyst  
comprising

(i) (a) a zirconocene compound represented by the following formula



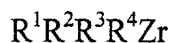
wherein two of  $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$  are each a substituted indenyl group substituted with  
aryl group, and linked together through dimethylsilylene; and the remaining two of  $R^1$ ,  
 $R^2$ ,  $R^3$  and  $R^4$  are each a halogen atom, and

(ii) at least one organoaluminum oxy-compound,

to prepare a propylene polymer (A1) having a melt flow rate (MFR), as measured  
according to ASTM D-1238, at 230°C under a load of 2.16 kg, of 0.01 to 30 g/10 min.;  
and a molecular weight distribution (Mw/Mn), as measured by gel permeation  
chromatography (GPC), of 2 to 3;

polymerizing propylene in the presence of an olefin polymerization catalyst  
comprising

(i) (a) a zirconocene compound represented by the following formula



wherein two of  $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$  are each a substituted indenyl group substituted with  
aryl group, and linked together through dimethylsilylene; and the remaining two of  $R^1$ ,  
 $R^2$ ,  $R^3$  and  $R^4$  are each a halogen atom, and

24 (ii) at least one organoaluminum oxy-compound,  
 25 to prepare a propylene polymer (A2) having a melt flow rate (MFR), as measured  
 26 according to ASTM D-1238, at 230°C under a load of 2.16 kg, of 30 to 1000 g/10 min.;  
 27 and a molecular weight distribution (Mw/Mn), as measured by gel permeation  
 28 chromatography (GPC), of 2 to 4; wherein the ratio ((A2)/(A1)) of the MFR of said  
 29 propylene polymer (A2) to the MFR of said propylene polymer (A1) is not less than 30;  
 30 and  
 31 wherein the steps of preparing the propylene polymers (A1) and (A2) are  
 32 conducted in an arbitrary order; and the amount of the propylene polymer (A1) is 10 to  
 33 90% by weight, the amount of the propylene polymer (A2) is 10 to 90% by weight.

1 Claim 3. A propylene polymer composition which is the product obtained by the  
 2 steps comprising:

3 polymerizing propylene in the presence of an olefin polymerization catalyst  
 4 comprising

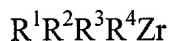
5 (d) a solid titanium catalyst compound, and

6 (e) an organoaluminum compound catalyst component,

7 to prepare a propylene polymer (A3) having a melt flow rate (MFR), as measured  
 8 according to ASTM D-1238, at 230°C under a load of 2.16 kg, of 0.01 to 30 g/10 min.;  
 9 and a molecular weight distribution (Mw/Mn), as measured by gel permeation  
 10 chromatography (GPC), of 4 to 15;

11 polymerizing propylene in the presence of an olefin polymerization catalyst  
 12 comprising

13 (i) (a) a zirconocene compound represented by the following formula



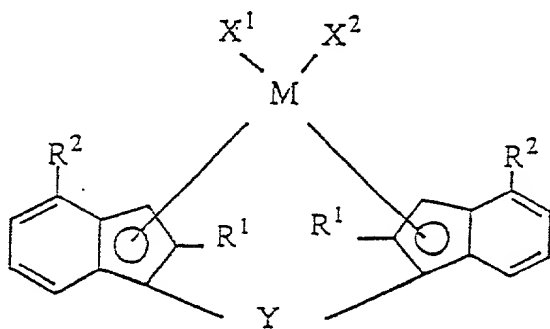
14  
 15 wherein two of  $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$  are each a substituted indenyl group substituted with  
 16 aryl group, and linked together through dimethylsilylene and the remaining two of  $R^1$ ,  $R^2$ ,  
 17  $R^3$  and  $R^4$  are each a halogen atom, and

(ii) at least one organoaluminum oxy-compound,  
 to prepare a propylene polymer (A2) having a melt flow rate (MFR), as measured according to ASTM D-1238, at 230°C under a load of 2.16 kg, of 30 to 1000 g/10 min.; and a molecular weight distribution (Mw/Mn), as measured by gel permeation chromatography (GPC), of 2 to 4; and  
 mixing 10 to 90% by weight of a propylene polymer (A3) and 10 to 90% by weight of the propylene polymer (A2).

Claim 4. The propylene polymer composition as claimed in claim 1 or 2, which further comprises, blended therewith, 3 to 30 parts by weight, based on 100 parts by weight of total amount of propylene polymers (A1) and (A2), of a soft polymer (B) which is a (co)polymer of ethylene or an  $\alpha$ -olefin of 3 to 20 carbon atoms, and having MFR, as measured at 190°C under a load of 2.16 kg, of 0.01 to 100 g/10 min., and a crystallinity, as measured by x-ray diffractometry, of less than 30%.

Claim 5. The propylene polymer composition as claimed in claim 3, which further comprises, blended therewith, 3 to 30 parts by weight, based on 100 parts by weight of total amount of propylene polymers (A3) and (A2), of a soft polymer (B) which is a (co)polymer of ethylene or an  $\alpha$ -olefin of 3 to 20 carbon atoms, and having MFR, as measured at 190°C under a load of 2.16 kg, of 0.01 to 100 g/10 min., and a crystallinity, as measured by x-ray diffractometry, of less than 30%.

Claim 6. The propylene polymer composition according to claim 1 wherein the zirconocene compound (i)(a) used to prepare propylene polymer (A1) and propylene polymer (A2) is a compound represented by the formula (I):



(I)

wherein M represents a zirconium atom;

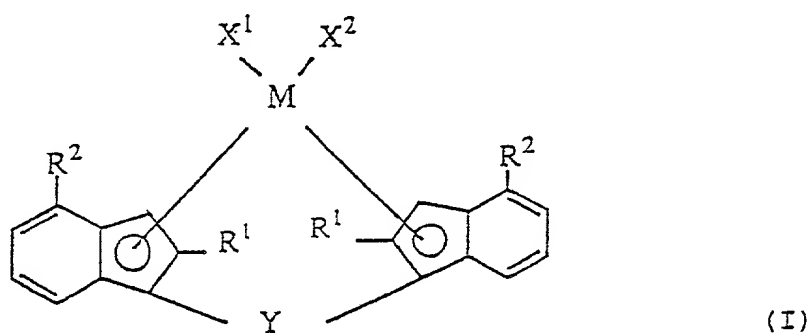
$X^1$  and  $X^2$  each represent a halogen atom;

$R^1$  represents an alkyl group of from 2 to 6 carbon atoms;

$R^2$  represents an aryl group having from 6 to 16 carbon atoms; and

Y represents dimethylsilylene.

Claim 7. The propylene polymer composition according to claim 2 wherein the zirconocene compound (i)(a) used to prepare propylene polymer (A1) and propylene polymer (A2) is a compound represented by the formula (I):



wherein M represents a zirconium atom;

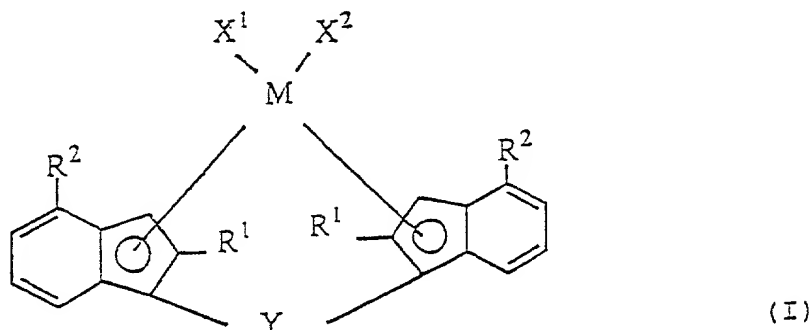
$X^1$  and  $X^2$  each represent a halogen atom;

$R^1$  represents an alkyl group of from 2 to 6 carbon atoms;

$R^2$  represents an aryl group having from 6 to 16 carbon atoms; and

Y represents dimethylsilylene.

Claim 8. The propylene polymer composition according to claim 3 wherein the zirconocene compound (i)(a) is a compound represented by the formula (I):



wherein M represents a zirconium atom;

$X^1$  and  $X^2$  each represent a halogen atom;

$R^1$  represents an alkyl group of from 2 to 6 carbon atoms;

$R^2$  represents an aryl group having from 6 to 16 carbon atoms; and

Y represents dimethylsilylene.

Claim 9. The propylene polymer composition according to claim 1 wherein the zirconocene compound (i)(a) used to prepare propylene polymer (A1) and propylene polymer (A2) is rac-dimethylsilyl-bis(2-ethyl-4-phenylindenyl)zirconium dichloride.

Claim 10. The propylene polymer composition according to claim 2 wherein the zirconocene compound (i)(a) used to prepare propylene polymer (A1) and propylene polymer (A2) is rac-dimethylsilyl-bis(2-ethyl-4-phenylindenyl)zirconium dichloride.

Claim 11. The propylene polymer composition according to claim 3 wherein the zirconocene compound (i)(a) is rac-dimethylsilyl-bis(2-ethyl-4-phenylindenyl)zirconium dichloride.

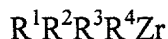
1 Claim 12. A propylene polymer composition comprising a physical or chemical  
2 blended mixture of from 10 to 90% by weight of first propylene polymer (A1) and from  
3 10 to 90% by weight of second propylene polymer (A2),

4 wherein polymer (A1) has a melt flow rate (MFR), measured according to ASTM  
5 D-1238, at 230°C, under a load of 2.16 kg, of 0.01 to 30 g/10 min; and a molecular  
6 weight distribution (Mw/Mn), measured by gel permeation chromatography (GPC), of 2  
7 to 3; and

8 wherein propylene polymer (A2) has a melt flow rate (MFR), measured according  
9 to ASTM D-1238, at 230°C, under a load of 2.16 kg, of 30 to 1000 g/10min; and a  
10 molecular weight distribution (Mw/Mn), measured by gel permeation chromatography  
11 (GPC), of 2 to 4; and

12 wherein propylene polymer (A1) and propylene polymer (A2) are each obtained  
13 by polymerizing propylene in the presence of an olefin polymerization catalyst  
14 comprising

15 (i)(a) a zirconocene compound represented by the formula



17 wherein  $R^1$  and  $R^2$  each represent indenyl substituted with an alkyl group and an  
18 aryl group;

19  $R^3$  and  $R^4$  each represent a halogen atom;

20 and wherein the two substituted indenyl groups are linked to each other through  
21 dimethylsilylene; and

22 (ii) at least one organoaluminum oxy-compound; and

23 wherein the ratio of the MFR of propylene polymer (A2) to the MFR of propylene  
24 polymer (A1) is not less than 30.

1 Claim 13. The propylene polymer composition according to claim 12 wherein  
2 propylene polymer (A1) has a crystallinity of not less than 40% and contains not  
3 more than 10 mole% of another olefin; and

4 propylene polymer (A2) has a crystallinity of not less than 40% and contains not  
5 more than 5 mole% of another olefin.

1 Claim 14. The propylene polymer composition according to claim 13 wherein  
2 propylene polymer (A1) is a propylene homopolymer.

1 Claim 15. The propylene polymer composition according to claim 14 wherein  
2 propylene polymer (A2) is a propylene homopolymer.

1 Claim 16. The propylene polymer composition according to claim 13 wherein  
2 propylene polymer (A2) is a propylene homopolymer.

1 Claim 17. The propylene polymer composition according to claim 13 which  
2 comprises from 30 to 70% by weight of propylene polymer (A1) and from 30 to 70% by  
3 weight of propylene polymer (A2).